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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/697,789	10/26/2000	Graham Mensa-Wilmot	05516/084001	5600

22511 7590 02/12/2004  
ROSENTHAL & OSHA L.L.P.  
1221 MCKINNEY AVENUE  
SUITE 2800  
HOUSTON, TX 77010

EXAMINER

GAY, JENNIFER HAWKINS

ART UNIT PAPER NUMBER

3672

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/697,789

Applicant(s)

MENSA-WILMOT ET AL.

Examiner

Jennifer H Gay

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 5-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5, 7, 8, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tibbitts et al. (US 6,006,846) in view of Tomlinson et al. (US 4,787,466).

*Regarding claims 5, 8, and 11:* Tibbitts et al. discloses a drill bit with the following features:

- A main body (210) with a plurality of blades (302 and 304).
- A plurality of cutting elements (110) mounted on the blades.
- The cutting elements including a mounting pad (the blades themselves are considered the mounting pad), substrate (see Figure 2), and a diamond table (see Figure 2 and col. 7, lines 20-30).

Tibbitts et al. discloses all of the limitations of the above claims except for the mounting pad including a relief groove that extends back from the outer surface of the blade at least 40 percent of the portion of the thickness of the diamond table that does not extend past the outer surface of the blade. As seen in Figure 2A, Tomlinson et al. discloses a cutting element that includes a mounting pad (10), a substrate (26), and a diamond table (24). A relief groove (32) is formed in the mounting pad and extends back from the outer surface of the blade at least 40 percent of the portion of the thickness of the diamond table that does not extend past the outer surface of the mounting pad. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the relief groove of Tomlinson et al. in the mounting pad of Tibbitts et al. in order to have minimized heat damage to the cutting element when attaching the element to the mounting pad (see col. 2, lines 34-50).

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*Regarding claims 7 and 10:* Tibbitts et al. and Tomlinson et al. disclose all of the limitations of the above claims except for the relief groove having a depth of 0.025 inches. However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the relief groove of Tibbitts et al. in view of Tomlinson et al. with a depth of 0.025 inches, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

*Further regarding claim 11:* Neither Tibbitts et al. nor Tomlinson et al. teach that the bit body is formed by machining a bit body blank, however, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

3. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tibbitts et al. (US 6,006,846) in view of Tomlinson et al. (US 4,787,466) as applied to claims 5 and 8 above, and further in view of Butcher (US 6,220,117).

Tibbitts et al. and Tomlinson et al. disclose all of the limitations of the above claims except for forming the bit body from powered tungsten carbide infiltrated by a binder alloy. Butcher teaches a method of forming a drill bit. The drill bit is formed from a powered metal, tungsten carbide for example, that is infiltrated by a binder alloy. (See col. 3, line 25-col. 3, line 47). It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the drill bit body of Tibbitts et al. in view of Tomlinson et al. from powered tungsten carbide infiltrated by a binder alloy as taught by Butcher in order to have provided a drill bit that exhibited a relatively high strength compared to conventional drill bits (see col. 2, lines 43-47).

### ***Response to Arguments***

4. In view of applicant's explanation of the limitations in claims 5 and 8, the 35 USC 112(2) rejection of claims 5-10 has been withdrawn.

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5. Applicant's arguments filed 17 December 2003 have been fully considered but they are not persuasive.

In response to applicant's argument that Tomlinson et al. does not teach a groove, the examiner notes that a groove (32) can clearly be seen in Figures 2A and 2B.

In response to applicant's argument that Tomlinson et al. makes no reference to any type of mounting pad formed in a blade of a drill bit, the examiner notes that Tomlinson et al. was used merely to teach a groove formed underneath the diamond table and in the portion of the drill bit/cutter that the diamond table is secured to. Further, the "pin" (10) of Tomlinson et al. serves the same function as the mounting pad taught by Tibbitts et al.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

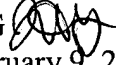
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
David Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

JHG   
February 9, 2004